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REPORT ON THE COLLECTION AND COMPILATION OF DATA ON POINT SOURCES OF AIR POLLUTANTS EMISSIONS FOR THE STATE OF MARYLAND AND DISTRICT OF COLUMBIA

TRW, Incorporated

Prepared for:

Environmental Protection Agency

27 October 1972

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REPORT ON THE COLLECTION AND COMPILATION OF DATA ON POINT SOURCES OF AIR POLLUTANTS EMISSIONS FOR THE STATE OF MARYLAND AND DISTRICT OF COLUMBIA

Contract No. 68-02-0048
Task Order 10

27 October 1972

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Environmental Protection Agency
Research Triangle Park, N.C.

Prepared By

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15. Supplementary Notes

16. Abstracts

The scope of the effort on the inventory update is summarized. Sections are presented under the headings: power plants; Federal facilities; Maryland facilities; and D. C. facilities.

17. Key Words and Document Analysis. 17a. Descriptors

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INTRODUCTION

This report summarizes the scope of the effort on the Maryland and District of Columbia point sources inventory update. This work was performed under Task Order 10, Contract No. 68-02-0048.

POWER PLANTS

Most of the power plant load sheets were obtained from Federal Power Commission reports obtained from the EPA Project Officer and entitled "Steam-Electric Plant Air and Water Quality Control Data for Year Ended December 31, 1969" (FPC Form 67) and the same report dated December 31, 1970. These reports were sufficiently detailed to provide all required data with the exception of UTM coordinates. The coordinates were converted from the Maryland grid coordinates in the printout. UTM coordinates for the D.C. power plants were obtained from the D.C. air pollution control officials' files. Boilers were apportioned to stacks for all the power plants appearing in the Federal Power Commission reports.

FEDERAL FACILITIES

Point source data on Federal facilities in the District of Columbia and Maryland were obtained from EPA's computer printout "Federal Facilities Emissions." The data were coded on the NEDS forms in accordance with the instructions and examples in the letter from John C. Bosch, dated August 4, 1972, subject: Coding of Federal Point Source Information on NEDS Data Forms.

MARYLAND FACILITIES

The questionnaires in the Maryland data file were not always complete. Additionally, some inconsistencies were found in the data.

Data for private sources and some power plants were extracted from State of Maryland air pollution source inventory printouts and the State of Maryland file of this inventory. Data were first taken from the printouts and entered onto computer load sheets. Later, additional data were extracted from the Maryland files and entered onto these same load sheets. At this time, the data first extracted from the printouts were verified against the Maryland files.

The Maryland files contained, in addition to letters, text, and diagrams, a multitude of questionnaires (some old format and others new format) for the same piece of equipment. The forms, of various dates and at various stages of completion, were spread throughout the file made up for the particular establishment. The old forms have certain data (particularly stack data) required on the NEDS load sheets and not found on the new forms. Therefore, data were first taken from the most up-to-date new type form and then additional data were taken from the most up-to-date old type form. Then the file was searched for whatever data were still missing.

In the case of identical units of equipment at any facility covered by the Maryland file, all units were covered by one questionnaire. The amounts processed, produced, combusted, etc., appearing on the questionnaire were intended to be totals for all units covered by the questionnaire; while fuel rate capcities, MBTU per hour capacities, production per hour, processed material per hour, and other rates were to be per unit quantities. However, rate per hour values sometimes appeared to be a total for all units; while at other times, total production, process, fuel combustion, etc., amounts were suspected to really be per unit amounts. These inconsistencies may have provided some error in the data transcribed onto the NEDS load sheets.

Specific problem areas were as follows.

City Code Numbers

Where the city code number was not available, this field was left blank.

Mailing Address

Mailing addresses were completed from the Maryland files. Often the field was not long enough to completely fit even an abbreviated name and address. In such cases, the balance of the address was put below the field. The complete name and address was put on only the first load sheet of each facility, to save time.

Stack Data

In nearly all cases, it was not too apparent what units fed which stacks. It was therefore decided, with EPA's concurrence, that a separate load sheet be filled out for each piece of equipment, instead of for each stack. In addition, it was not always possible to apportion flow rates nor diameters to specific units. Stack data entered onto load sheets were most often actual stack data, unapportioned.

Combustion source questionnaires in the Maryland file just provided for stack height. The balance of the stack data was missing. Process source questionnaires in the Maryland files provided all required stack data. However, diameters had to be converted from inches to feet and flow rates were obtained by multiplying gas velocities by calculated cross-sectional areas. Equivalent stack diameters were calculated for stacks with rectangular cross-sections. Where stack data were not available, plume height was also left blank.

SIC and IPP Process Codes

Though a SIC code that described the manufacturing process could nearly always be found in the printout, selecting a satisfactory IPP process code from those available was not necessarily possible. The equipment or process description on the questionnaire might be for only a portion of that process described by the IPP process code. In many cases, only a person with detailed knowledge of the particular process could pick the correct code.

Boiler Design Capacities

These capacities were obtained from the Maryland files. It is suspected that sometimes the values shown on the multiple units' questionnaires were totals rather than per unit values.

Control Equipment Types

Control equipment types were identified in the printout, but control efficiencies were not given. Control equipment efficiencies were obtained from the Maryland questionnaires. The efficiencies were necessary for selecting the control equipment code numbers. When efficiencies were lacking, this field was left blank and the generic name of the device written above the field. Sometimes diagrams in the Maryland files provided insight into how the control equipment served the process equipment and boilers. These diagrams would show if control equipments were in parallel or series with one another and integrated efficiencies could be calculated.

Normal Operating Times

These times were obtained from the Maryland files. Only the process questionnaires provided for these data; the combustion questionnaires did not. In the case of boilers, it was necessary to make educated assumptions based on the operating times of boiler-associated processes or use of the boiler.

Emission Estimates

Emission estimates were taken from the printout and verified against the Maryland files. Carbon monoxide emissions were not given for boilers. These emissions were calculated from fuel usage. On several occasions, emissions were calculated using EPA approved emission factors and found to differ from the State of Maryland estimated emissions. In such cases, the Maryland estimated emissions were used. It is therefore probable that if calculations are performed they will differ from Maryland's estimates.

Percent Space Heat

Percent space heat, except for a rare once or twice, was not found either in the computer printout or the source questionnaires.

SCC Numbers

It was often not possible to find SCC numbers that would completely satisfy the reported process. Interpretation of satisfying SCC numbers has probably varied between persons filling load sheets. In most cases, many processes and equipments contributed to a finished product. Therefore, it was desirable to first search for a process related SCC number before settling for a product related number (e.g., if they fabricate metal parts, but the process is painting these parts, then 40200101 would be used instead of 30900199). In cases where available SCC codes did not adequately describe the process, 9's were entered in the appropriate fields.

Operating Rate

These annual rates were taken from the Maryland files. Units corresponded to those listed for the related SCC number. When these rates were missing from the questionnaire, the space was left blank.

Maximum Design Rate

These rates were either obtained from the questionnaires in the Maryland files or calculated by dividing the number of hours of operation into the operating rate. The calculation probably resulted in a value considerably lower than the actual maximum design rate.

Heat Content

This field was mostly left blank since the heat content was rarely given in the questionnaires and did not appear in the printouts.

Comments

This field was used to identify the equipment and/or process. The printout showed equipment code numbers which were used to provide the initial entries into this field. These entries were later modified using the Maryland files. It was found that the equipment code numbers often did not accurately reflect the actual process as identified in the Maryland questionnaires.

D.C. FACILITIES

Data in the files maintained by D.C. air pollution control officials were compiled by facilities rather than by individual equipment . However, this had little effect on filling out the load sheets since the only D.C. process sources were petroleum storage tanks. Data missing from the D.C. load sheets were not available in the D.C. files.